

THAT WHICH IS CLAIMED:

1. A fiber optic installation structure comprising:

a duct, comprising an inner tube and a jacket, the jacket generally surrounding the inner tube, wherein the jacket is formed from a material that is compressible, so that when the duct is disposed within a channel defined by a paved surface a friction fit is created between the duct and the channel over a portion of the length;

at least one optical waveguide disposed within at least a portion of the inner tube of the duct; and

a filling material overlying the duct and at least partially filling the channel.

2. The fiber optic installation structure of claim 1, the jacket being a foamed material adapted for being compressed by when inserted into the channel, wherein a major dimension of the jacket is compressed by about five percent or more when inserted into the channel.

3. The fiber optic installation structure of claim 1, the duct further comprising an armor layer, the armor layer being generally disposed between the inner tube and the jacket.

4. The fiber optic installation structure of claim 3, the armor layer being formed from a helically wrapped interlocking armor tape.

5. The fiber optic installation structure of claim 3, the armor layer being formed from a longitudinally wrapped armor tape.

6. The fiber optic installation structure of claim 1, the inner tube having ribs on a portion of the inner surface for aiding in routing optical fibers within the inner tube.

7. The fiber optic installation structure of claim 1, the duct having a non-round cross-section.
- 5 8. The fiber optic installation structure of claim 1, the duct having a non-round cross-section and an armor layer, the armor layer being generally disposed between the inner tube and the jacket.
- 10 9. The fiber optic installation structure of claim 1, the jacket being formed from a heat resistant material.
10. The fiber optic installation structure of claim 1, the jacket being a material that is compressed by about five percent
15 or more along a major dimension of the jacket when inserted into the channel and an armor layer generally disposed between the inner tube and the jacket.
11. The fiber optic installation structure of claim 1, the inner
20 tube having ribs on a portion of the inner surface for aiding in routing optical fibers within the inner tube and an armor layer generally disposed between the inner tube and the jacket.
12. The fiber optic installation structure of claim 1, the duct
25 further comprising at least one wire wrapped about the inner tube with the at least one wire being selected from the group of a conductive material, a non-conductive material, and a composite material.
- 30 13. The fiber optic installation structure of claim 1, further comprising at least one electrical conductor.

14. The fiber optic installation structure of claim 1, the jacket being formed from at least two layers.

15. A duct suitable for being securely held in a channel cut in a paved surface, comprising:

an inner tube; and

a jacket, the jacket generally surrounding the inner tube, the jacket is formed from a material that is compressible so when the duct is placed within the channel the jacket material is capable of being compressed, thereby forming a friction fit between the duct and the channel.

16. The duct of claim 15, the jacket being a foamed material adapted for being compressed when inserted into the channel, wherein a major dimension of the jacket is compressed by about five percent or more when inserted into the channel.

17. The duct of claim 15, further comprising an armor layer, the armor layer being generally disposed between the inner tube and the jacket.

18. The duct of claim 17, the armor layer being formed from a helically wrapped interlocking armor tape.

19. The duct of claim 17, the armor layer being formed from a longitudinally wrapped armor tape.

20. The duct of claim 15, the inner tube having ribs on a portion of the inner surface for aiding in routing optical fibers within the inner tube.

21. The duct of claim 15, the duct having a non-round cross-section.

22. The duct of claim 15, the duct having a non-round cross-section and an armor layer, the armor layer being generally disposed between the inner tube and the jacket.

5 23. The duct of claim 15, the jacket being formed from a heat resistant material.

24. The duct of claim 15, the jacket being a material adapted for being compressed by about five percent or more along a major
10 dimension of the jacket when inserted into the channel and an armor layer generally disposed between the inner tube and the jacket.

25. The duct of claim 15, the inner tube having ribs on a
15 portion of the inner surface for aiding in routing optical fibers within the inner tube and an armor layer generally disposed between the inner tube and the jacket.

26. The duct of claim 15, the duct further comprising at least
20 one wire wrapped about the inner tube with the at least one wire being selected from the group of a conductive material, a non-conductive material, and a composite material.

27. The duct of claim 15, further comprising at least one
25 electrical conductor.

28. The duct of claim 15, the jacket being formed from at least two layers.

30 29. A method for routing a duct within a paved surface, comprising the steps of:

forming a channel in a paved surface, the channel having a predetermined width; and

placing a duct having an inner tube and a jacket into the channel, thereby forming a friction fit between the duct and the channel over a portion of the length.

5 30. The method of claim 29, the jacket having a major dimension that is greater than the predetermined width of the channel, wherein the jacket of the duct is compressed when the duct is placed within the channel.

10 31. The method of claim 30, the step of placing the duct into the channel comprising compressing the major dimension of the jacket by at least about five percent, thereby forming the friction fit.

15 32. The method of claim 29, further comprising the step of placing a filling material into the channel that overlies the duct, thereby at least partially filling the channel and covering the duct.

20 33. The method of claim 29, further comprising the step of routing at least one optical fiber within the duct.

34. The method of claim 29, the jacket of the duct being a foamed material.

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35. The method of claim 29, the jacket being formed from a heat resistant material.

36. The method of claim 29, the duct having a non-round cross-
30 section.

37. The method of claim 29, a ratio between a channel width and a major dimension of the duct being about 0.95 or less.

38. A fiber optic installation structure comprising:

a duct, comprising an inner tube and a jacket, the jacket generally surrounding the inner tube;

5 a channel defined by a paved surface, the duct being disposed within the channel so that a friction fit is created between the duct and the channel over a portion of the length;

at least one optical waveguide disposed within at least a portion of the inner tube of the duct; and

10 a filling material overlying the duct and at least partially filling the channel.

39. The fiber optic installation structure of claim 38, the duct further comprising an armor layer, the armor layer being

15 generally disposed between the inner tube and the jacket.

40. The fiber optic installation structure of claim 38, the inner tube having ribs on a portion of the inner surface for aiding in routing optical fibers within the inner tube.

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41. The fiber optic installation structure of claim 38, the jacket being formed from a heat resistant material.

42. The fiber optic installation structure of claim 38, the inner tube having ribs on a portion of the inner surface for aiding in routing optical fibers within the inner tube and an armor layer generally disposed between the inner tube and the jacket.

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43. The fiber optic installation structure of claim 38, the duct further comprising at least one wire wrapped about the inner tube with the at least one wire being selected from the group of a

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conductive material, a non-conductive material, and a composite material.

44. The fiber optic installation structure of claim 38, further
5 comprising at least one electrical conductor.

45. The fiber optic installation structure of claim 38, the jacket being formed from at least two layers.